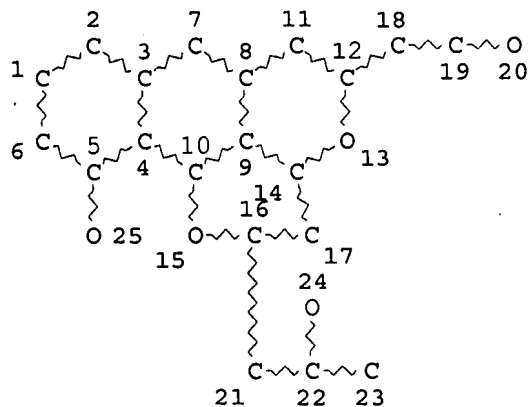


10/5 33,378

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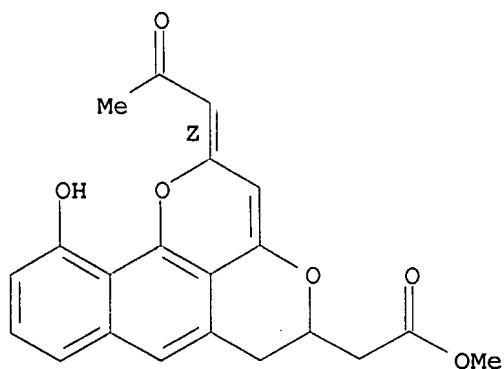
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L3 ANSWER 1 OF 4 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 269058-83-5 REGISTRY  
ED Entered STN: 08 Jun 2000  
CN 2H-Benzo[h]pyrano[2,3,4-de]-1-benzopyran-5-acetic acid,  
5,6-dihydro-11-hydroxy-2-(2-oxopropylidene)-, methyl ester, (2Z)- (9CI)  
(CA INDEX NAME)  
FS STEREOSEARCH  
MF C21 H18 O6  
SR CA  
LC STN Files: CA, CAPLUS, CHEMCATS

Double bond geometry as shown.



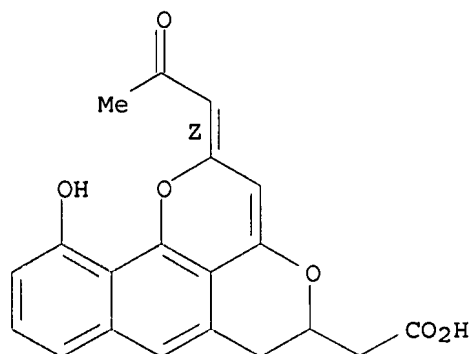
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1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

1 RN 269058-83-5 REGISTRY

L3 ANSWER 2 OF 4 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 269058-81-3 REGISTRY  
ED Entered STN: 08 Jun 2000  
CN 2H-Benzo[h]pyrano[2,3,4-de]-1-benzopyran-5-acetic acid,  
5,6-dihydro-11-hydroxy-2-(2-oxopropylidene)-, (2Z)- (9CI) (CA INDEX NAME)  
FS STEREOSEARCH  
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SR CA  
LC STN Files: CA, CAPLUS

Double bond geometry as shown.

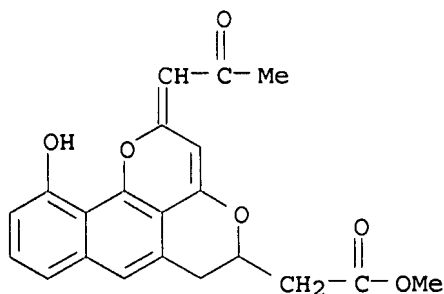


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1 REFERENCES IN FILE CA (1907 TO DATE)  
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 2 RN 269058-81-3 REGISTRY

L3 ANSWER 3 OF 4 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 247933-25-1 REGISTRY  
 ED Entered STN: 19 Nov 1999  
 CN 2H-Benzo[h]pyrano[2,3,4-de]-1-benzopyran-5-acetic acid,  
 5,6-dihydro-11-hydroxy-2-(2-oxopropylidene)-, methyl ester (9CI) (CA  
 INDEX NAME)

OTHER NAMES:  
 CN S 2502  
 MF C21 H18 O6  
 SR CA  
 LC STN Files: CA, CAPLUS, CHEMCATS, IMSDRUGNEWS, IMSRESEARCH, TOXCENTER,  
 USPATFULL

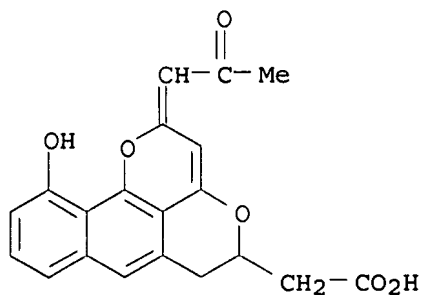


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 2 REFERENCES IN FILE CAPLUS (1907 TO DATE)  
 3 RN 247933-25-1 REGISTRY

L3 ANSWER 4 OF 4 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 247933-24-0 REGISTRY  
 ED Entered STN: 19 Nov 1999  
 CN 2H-Benzo[h]pyrano[2,3,4-de]-1-benzopyran-5-acetic acid,  
 5,6-dihydro-11-hydroxy-2-(2-oxopropylidene)- (9CI) (CA INDEX NAME)

OTHER NAMES:  
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 MF C20 H16 O6  
 SR CA  
 LC STN Files: CA, CAPLUS, IMSDRUGNEWS, IMSRESEARCH, TOXCENTER, USPATFULL



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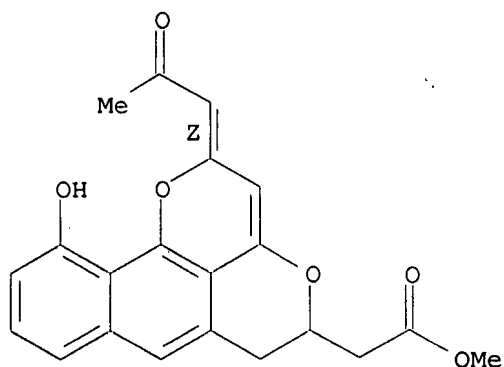
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 2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

4 RN 247933-24-0 REGISTRY

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L3 ANSWER 1 OF 4 REGISTRY COPYRIGHT 2007 ACS on STN  
 RN 269058-83-5 REGISTRY  
 ED Entered STN: 08 Jun 2000  
 CN 2H-Benzo[h]pyrano[2,3,4-de]-1-benzopyran-5-acetic acid,  
 5,6-dihydro-11-hydroxy-2-(2-oxopropylidene)-, methyl ester, (2Z)- (9CI)  
 (CA INDEX NAME)  
 FS STEREOSEARCH  
 MF C21 H18 O6  
 SR CA  
 LC STN Files: CA, CAPLUS, CHEMCATS

Double bond geometry as shown.



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1

AN 132:343978 CA  
 TI Elucidation of anthracyclinone biosynthesis by stepwise cloning of genes  
 for anthracyclines from three different Streptomyces spp.  
 AU Kantola, Jaana; Kunnari, Tero; Hautala, Anne; Hakala, Juha; Ylihonko,

Kristiina; Mantsala, Pekka  
CS Department of Biochemistry, University of Turku, Turku, FIN-20014, Finland  
SO Microbiology (Reading, United Kingdom) (2000), 146(1), 155-163  
CODEN: MROBEO; ISSN: 1350-0872  
PB Society for General Microbiology  
DT Journal  
LA English  
AB

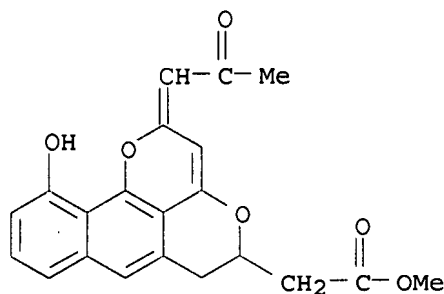
The anthracycline skeleton is biosynthesized by aromatic (type II) polyketide synthases. Furthermore, three post-polyketide steps are needed to form the basic aglycon of anthracyclines. Auramycinone was produced in *Streptomyces lividans* by introducing nine structural genes from three different anthracycline-producing *Streptomyces* species. The genes used to construct the auramycinone biosynthesis cluster were derived from nogalamycin-, daunomycin- and aclacinomycin-producing *Streptomyces* strains. The biosynthetic stages were divided into polyketide and post-polyketide steps on the assumption that the first stable intermediate would be nogalonic acid, named analogously to aklanonic acid, the precursor of several anthracyclines. Single genes were cloned in the expression construct in the order determined by the proposed biosynthetic pathway. This facilitated investigation of the products formed in the heterologous host after addition of each sep. gene to the construct. The results thus elucidate the biosynthesis steps, products and the genes responsible for the reactions needed to build up an anthracyclinone.

RE.CNT 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 3 OF 4 REGISTRY COPYRIGHT 2007 ACS on STN  
RN 247933-25-1 REGISTRY  
ED Entered STN: 19 Nov 1999  
CN 2H-Benzo[h]pyrano[2,3,4-de]-1-benzopyran-5-acetic acid,  
5,6-dihydro-11-hydroxy-2-(2-oxopropylidene)-, methyl ester (9CI) (CA  
INDEX NAME)

OTHER NAMES:

CN S 2502  
MF C21 H18 O6  
SR CA  
LC STN Files: CA, CAPLUS, CHEMCATS, IMSDRUGNEWS, IMSRESEARCH, TOXCENTER,  
USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

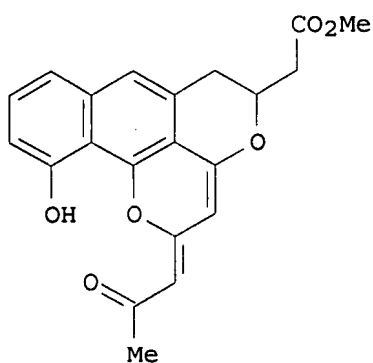
REFERENCE 1

AN. 141:1298 CA  
TI Aromatic polyketide intermediates as selective anticancer and antiviral

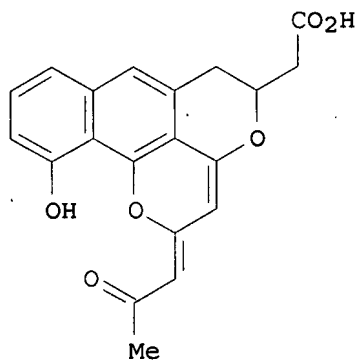
agents  
 IN Kunnari, Tero; Vuento, Matti  
 PA Galilaeus OY, Finland  
 SO PCT Int. Appl., 18 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

|      | PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE     |
|------|--|------|----------|-----------------|----------|
| PI   | WO 2004045600  | A1   | 20040603 | WO 2003-FI885   | 20031119 |
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|      | CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,    |      |          |                 |          |
|      | GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,    |      |          |                 |          |
|      | LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO,    |      |          |                 |          |
|      | NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ,    |      |          |                 |          |
|      | TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW         |      |          |                 |          |
|      | RW:  |      |          |                 |          |
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|      | TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG |      |          |                 |          |
|      | FI 2002002074  | A    | 20040521 | FI 2002-2074    | 20021120 |
|      | FI 114863  | B1   | 20050114 |                 |          |
|      | AU 2003282151  | A1   | 20040615 | AU 2003-282151  | 20031119 |
|      | EP 1562580   | A1   | 20050817 | EP 2003-773769  | 20031119 |
|      | R:   |      |          |                 |          |
|      | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,    |      |          |                 |          |
|      | IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK         |      |          |                 |          |
|      | JP 2006508146  | T    | 20060309 | JP 2004-552763  | 20031119 |
|      | US 2006122260  | A1   | 20060608 | US 2005-533378  | 20050429 |
| PRAI | FI 2002-2074   |      | 20021120 |                 |          |
|      | WO 2003-FI885  |      | 20031119 |                 |          |

GI



I



II

AB The invention relates to the finding of potentiality of aromatic polyketide intermediates in drug development and, specifically, use of these compds. in development of antiviral or anticancer medicines. Specifically disclosed are compds. S2502 (I) and S2507 (II).

#### REFERENCE 2

AN 131:308648 CA  
 TI Hybrid compounds derived from the combination of anthracycline and actinorhodin biosynthetic pathways  
 AU Kunnari, Tero; Kantola, Jaana; Ylihonko, Kristiina; Klika, Karel D.; Mantsala, Pekka; Hakala, Juha  
 CS Galilaeus Oy, Kaarina, FIN-20781, Finland  
 SO Journal of the Chemical Society, Perkin Transactions 2: Physical Organic

Chemistry (1999), (8), 1649-1652

CODEN: JCPKBH; ISSN: 0300-9580

PB Royal Society of Chemistry

DT Journal

LA English

AB A new approach in the field of polyketide biosynthetic engineering, the combination of the biosynthetic routes of two different sources, is introduced. *Streptomyces nogalater* genes expressed in *S. lividans* TK24 yield the hybrid strain TK24/pSY15. Structural anal. of the products isolated from cultivation of the hybrid strain revealed the ability of the hybrid to produce novel compds. Instead of accumulating characteristic products (e.g. actinorhodin) of the host *S. lividans* TK24, or intermediate compds. expected to be generated by the plasmid pSY15 (e.g. nogalamycin precursor), the hybrid strain produces novel compds. reflecting the enzymic activity of both the host and the expressed plasmid. This implies that genes from 2 different types of aromatic polyketide biosynthesis are working together. The method described in this work complements earlier targeted biosyntheses.

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

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